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EXAMINER
BONZO, BRYCE P

ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/924,955	QUINLAN, UNA	
	Examiner	Art Unit	
	Bryce P. Bonzo	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13,14 and 16-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,13,14 and 16-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

NON-FINAL OFFICIAL ACTION

Status of the Claims

Claims 1-11, 13, 14, 16-20 are rejected under 35 USC §103.

Rejections under 35 USC §103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11, 13, 14, 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sterner (United States Patent No. 6,728,216) in view of Hurwitz (United States Patent No. 5,884,041.

As per the claim 1, Hurwitz discloses:

1.) A method of diagnosing, in a network comprising two devices connectable by a link, the type of failure of the connection between the devices, said method comprising:

connecting the two devices together at least one of the devices including a plurality of registers (page 3, lines 13-18), each register being adapted to store data about one or more types of said failure (column 3, lines 40-65),

running an auto-negotiation sequence (column 3, lines 39-41),

detecting said failure and passing signals relating to that failure to the relevant register(s) (column 5, lines 14-19),

interrogating the or each register (column 4, lines14-19), and

determining the type of said failure from a plurality of types of failure (column 5, lines 21-28),

said detection step is carried out by signal detector logic in a data/link layer of the OSI protocol stack of one of said devices (page 2, lines 55-68).

Hurwitz does not explicitly disclose:

said signal detector logic including a bit error counter to count symbol errors.

Sterner discloses:

connecting the two devices together at least one of the devices including a plurality of registers each register being adapted to store data about one or more types of said failure (Figure 1, items 14a)

running an auto-negotiation sequence (Figure 2, item 62),

detecting said failure and passing signals relating to that failure to the relevant register(Figure 2, item 66),

interrogating the or each register (Figure 2, item 66)), and

said detection step is carried out by signal detector logic in a data/link layer of the OSI protocol stack of one of said devices (page 2, lines 55-68), said signal detector

logic including a bit error counter to count symbol errors (column 7, lines 4 through column 8, lines 8).

While Hurwitz does not explicitly disclose the presence of a bit error counter in conjunction with a symbol error detector, Hurwitz does disclose that his system is clearly extensible to handle more types of events (which in Hurwitz translate to errors, column 5, lines 28-37). Therefore it would have been obvious to one of ordinary skill in the art to integrate the symbol error handling mechanisms of Sterner's auto-negotiator in to the auto-negotiator of Hurwitz, thus creating a stronger auto-negotiation sequencer allowing for more reliable communication.

As per claim 2, Hurwitz discloses:

the step of determining the data in the relevant register(s) (page 5, lines 26-38) and from said data, indicating the type of said failure and/or a proposed course of action (column 5, lines 21-23).

As per claim 3, Hurwitz does not explicitly disclose:

indicating the type of said failure and/or a proposed course of action on said visual display unit. Official Notice it is notoriously well known the provide visual display units on the network adapters which indicate types of errors. This is commonly provided for by a set of small LEDs on the faceplate of the network adapter. Typically these error lights are used for used to provide an indication of either a connectivity error or card malfunction. These LEDs are provide a user with a mechanism to quickly and

visually inspect the state of the networking elements of the computer system. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the LEDs of the well established prior art into the system of Hurwitz thus creating a user interface to convey the error information to a user, thus increasing the user accessibility of the error handling system of Hurwitz.

As per claim 4, Hurwitz does not explicitly disclose:

a loss of light failure. Hurwitz does explicitly disclose the extensibility of his system to handle more events (failures). Official Notice is given that loss of light is a well known type of fault in computer networks, which disables optical networks completely. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording of loss of light failures into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 5, Hurwitz does not disclose:

a bit/word alignment failure. Official Notice is given that a bit/word alignment fault is a well known type of fault in computer networks, which disrupts networks corrupting packetized data. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording of bit/word alignment faults into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 6, Hurwitz does not explicitly disclose:

a loss of synchronization. Official Notice is given a loss of synchronization is a well known type of fault in computer networks, which disrupts networks corrupting packetized data. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording a loss of synchronization faults into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 7, Hurwitz discloses:

an auto-negotiation hang during base page exchange. Official Notice is given that a auto-negotiation hang fault is a well known type of fault in computer networks, which aborts the establishment of a connection. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording of auto-negotiation hang faults into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 8, Hurwitz does not explicitly disclose:

an auto-negotiation hang during next page exchange. Official Notice is given that a auto-negotiation hang fault is a well known type of fault in computer networks, which aborts the establishment of a connection. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording of

auto-negotiation hang faults into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 9, Hurwitz does not explicitly disclose:

an auto-negotiation protocol (repeated) restart due to initiation of a "break link". Official Notice is given that a auto-negotiation due to initiation of a "break link " fault is a well known type of fault in computer networks, which aborts the establishment of a connection. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the recording of auto-negotiation due to initiation of a "break link" faults into the extensible system of Hurwitz, thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 10, Hurwitz discloses:

the steps of interrogation and of determining are controlled by a program on a device in the network (column 2, lines 49-54: also disclosed at column 6, lines 47-63 of Sterner).

As per claim 11, Hurwitz discloses:

the steps of interrogation and of determining are controlled by a program on one of said devices (column 2, lines 49-54; also disclosed at column 6, lines 47-63 of Sterner).

Claim 12 has been cancelled.

As per claim 13, Hurwitz does not explicitly disclose:

the link is a fibre optic signal and light is detected by a transceiver and the detector in a data/link layer of the OSI stack checks for an adequate power level on the received at the transceiver. Hurwitz does disclose the use of Ethernet the highly extensible data link protocol which is present in the data/link layer. Hurwitz further provides for extending the number and types of faults handled by the data/link layer. Official Notice is taken that is notoriously well known the check for power levels on fibre optic lines, as this the incorrect power levels on a fibre lines can indicate a damaged fibre line. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the checking of well known faults including loss of power

in a fibre line in to the system faults reporting system of Hurwitz, thereby thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

As per claim 14, Hurwitz does not explicitly disclose:

in which said signal detector in a data/link layer of the OSI stack of said devices deals with clock recovery, comma alignment and receive synchronization so as to check the received signal frequency, encoding integrity and correct alignment of the received signals. Hurwitz does disclose the use of Ethernet the highly extensible data link protocol which is present in the data/link layer. Hurwitz further provides for extending the number and types of faults handled by the data/link layer. Official Notice is taken that clock recovery, comma alignment and receive synchronization are notoriously well known to the check for errors in signal frequency, encoding integrity and correct alignment of digital signals. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the checking of well known faults including loss of power in a fibre line in to the system faults reporting system of Hurwitz, thereby thus providing for the alerting of a common error and increasing the versatility of the system of Hurwitz.

Claim 15 has been cancelled.

As per claim 16, Sterner discloses:

said bit error counter is set at regular intervals, to provide bit error rate calculation (column 7, lines 62 through column 8, line 7).

As per claim 17, Hurwitz discloses:

said signal detector logic in a data/link layer of the OSI protocol stack of one of said devices includes an auto-negotiation state machine which deals with the exchange of one or more pages of information between the two devices, handles link restarts by the link partner, and reports the link state and hangs (Figure 3A+3B; column 2, lines 55-68).

As per claim 18, Hurwitz discloses:

at least two device configured to connect together, at least one of the devices including a plurality of registers, each register adapted to store data about one or more types of said failure (column 3, lines 13-18);

wherein the system is configured to

run an auto negotiation sequence (Figure 3A and 3B);

detecting said failure and passing signals relating to that fault to the relevant register(s) (column 4, lines 4-19);

interrogate the or each register (column 4, lines 14-19); and

determine the type of said failure from said plurality of types of failure (column 5, lines 21-28);

said detection step being carried out by signal detection logic in a data/link layer of the OSI protocol stack of one of the devices (page 2, lines 55-68).

Hurwitz does not explicitly disclose:

said signal detector logic including a bit error counter to count symbol errors.

Sterner discloses:

at least two device configured to connect together, at least one of the devices including a plurality of registers, each register adapted to store data about one or more types of said failure (Abstract)

wherein the system is configured to

run an auto negotiation sequence (Figure 2, item 62));

detecting said failure and passing signals relating to that fault to the relevant register(s) (Figure 2, item 62);

interrogate the or each register (Figure 2, items 66-72); and

said detection step being carried out by signal detection logic in a data/link layer of the OSI protocol stack of one of the devices (column 7, lines 4 through column 8, lines 8)).

While Hurwitz does not explicitly disclose the presence of a bit error counter in conjunction with a symbol error detector, Hurwitz does disclose that his system is clearly extensible to handle more types of events (which in Hurwitz translate to errors, column 5, lines 28-37). Therefore it would have been obvious to one of ordinary skill in the art to integrate the symbol error handling mechanisms of Sterner's auto-negotiator in to the auto-negotiator of Hurwitz, thus creating a stronger auto-negotiation sequencer allowing for more reliable communication.

As per claim 19, Hurwitz discloses:

wherein the system is further configured to determine the data in the relevant register(s) and from said data, indicate the type of said failure and/or proposed course of action (column 5, lines 21-23).

As per claim 20, Hurwitz discloses:

connecting the two devices together at least one of the devices including a plurality of registers, each register being adapted to store data about one or more types of said failure (column 3, lines 13-18),

running an auto-negotiation sequence (column 3, lines 40-65);

detecting said failure and passing signals relating to that failure to the relevant register(s) (column 3, lines 39-41),

interrogating the or each register (column 4, lines 14-19), and

determining the type of said failure from a plurality of types of failure (column 5, lines 21-28)

said detection step being carried out by signal detection logic in a data/link layer of the OSI protocol stack of one said devices (column 2, lines 55-68).

Hurwitz does not explicitly disclose:

said signal detector logic including a bit error counter to count symbol errors.

Sterner discloses:

connecting the two devices together at least one of the devices including a plurality of registers, each register being adapted to store data about one or more types of said failure (column 3, lines 13-18),

running an auto-negotiation sequence (column 3, lines 40-65);

detecting said failure and passing signals relating to that failure to the relevant register(s) (column 3, lines 39-41),

interrogating the or each register (column 4, lines 14-19), and

said detection step being carried out by signal detection logic in a data/link layer of the OSI protocol stack of one said devices, said signal detector logic including a bit error counter to count symbol errors (column 7, lines 7 through column 8, line 8).

Response to Applicant's Remarks

During preparation for Allowance additional art was uncovered (Sterner). As required the necessary rejections under 35 USC §103 have been applied. This action is Non-Final and the standard 3 month shortened statutory period for response has been set.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryce P. Bonzo whose telephone number is (571)272-3655. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bryce P. Bonzo
Primary Examiner
Art Unit 2114